Game Changing Development

Advanced Design and Manufacture of Cryogenic Propellant Tanks for Air Launched Liquid Rockets

Completed Technology Project (2015 - 2018)

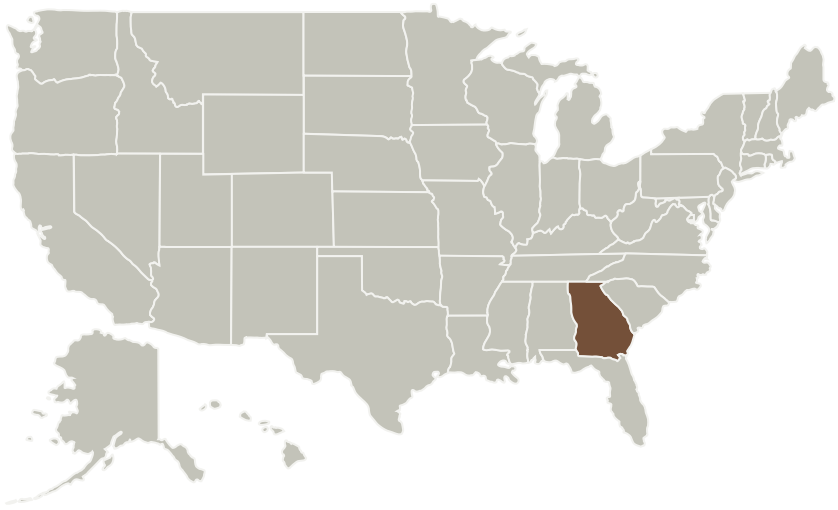
Project Introduction

Generation Orbit (GO) is developing a sub-orbital system to enable rapid and inexpensive hypersonic flight regime test capabilities. To keep the cost of their launch system low, GO acts as systems integrator, utilizing as many off-the-shelf components as possible.

Anticipated Benefits

This project hopes to develop a sub-orbital system to enable rapid and inexpensive hypersonic flight regime test capabilities.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Generation Orbit Launch Services, Inc.	Lead Organization	Industry	Atlanta, Georgia

Primary U.S. Work Locations
Georgia

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Table of Contents

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Project Transitions

November 2015: Project Start

March 2018: Closed out

Closeout Summary: This task was a collaboration between NASA LaRC and Ge neration Orbit Launch Services (GOLS), Inc. to evaluate the use of composites i n place of aluminum in the liquid oxygen propellant tanks. NASA was to design, analyze, and fabricate to composite manufacturing design units and deliver the m to GOLS for testing. A particular emphasis of this effort was on the use of tow steering to improve load redistribution from the pylon attachment into the tank. NASA LaRC's Integrated Structural Assembly of Advanced Composites (ISAAC) r obotic system was used in tank fabrication.

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Generation Orbit Launch Services, Inc.

Responsible Program:

Game Changing Development

Project Management

Program Director:

Mary J Werkheiser

Program Manager:

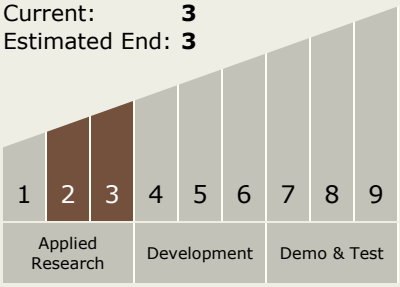
Gary F Meyering

Principal Investigator:

Adam Przekop

Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



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Target Destination

Earth